



Monticello Nuclear Generating Plant
2807 W County Road 75
Monticello, MN 55362

January 18, 2013

L-MT-13-018
10 CFR 50.73

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Monticello Nuclear Generating Plant
Docket 50-263
Renewed Facility Operating License No. DPR-22

LER 2012-003-01 "Automatic Reactor Scram during Maintenance on 4160V 12-Bus Ammeter"

A supplement to Licensee Event Report (LER) for this occurrence is attached.

Summary of Commitments

This letter contains no new commitments and no revisions to existing commitments.

A handwritten signature in black ink, appearing to read 'Mark A. Schimmel'.

Mark A. Schimmel
Site Vice-President, Monticello Nuclear Generating Plant
Northern States Power Company-Minnesota

Enclosure

cc: Regional Administrator, Region III, USNRC
Project Manager, Monticello Nuclear Generating Plant, USNRC
Resident Inspector, Monticello Nuclear Generating Plant, USNRC

NRC FORM 366 U.S. NUCLEAR REGULATORY COMMISSION (10-2010)				APPROVED BY OMB NO. 3150-0104 EXPIRES 10/31/2013																																							
LICENSEE EVENT REPORT (LER) (See reverse for required number of digits/characters for each block)																																											
1. FACILITY NAME Monticello Nuclear Generating Plant				2. DOCKET NUMBER 05000 - 263		3. PAGE 1 OF 3																																					
4. TITLE Automatic Reactor Scram During Maintenance on 4160V 12-Bus Ammeter																																											
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12. LICENSEE CONTACT FOR THIS LER <table style="width:100%;"> <tr> <td style="width:60%;">NAME Carrie Fosaaen, Licensing Engineer</td> <td>TELEPHONE NUMBER (Include Area Code) 763-295-1357</td> </tr> </table>								NAME Carrie Fosaaen, Licensing Engineer	TELEPHONE NUMBER (Include Area Code) 763-295-1357																																		
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ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) <p>On September 25, 2012 at the Monticello Nuclear Generating Plant, during maintenance on 4160V 12-Bus ammeter switch, a 12-Bus lockout occurred removing power from 12-Reactor Feed Pump and 12-Reactor Recirculation pump. With both Main Feed Regulating Valves in auto, the level transient reached the Reactor Water Level Hi Hi setpoint (+48 inches). The Main Turbine and 11-Reactor Feed Pump tripped as designed and a Reactor scram occurred.</p> <p>The root cause for the 12-Bus lockout was determined to be that fleet work management guidance does not require the appropriate level of detail needed to expose the potential impact when injecting energy into plant structures, systems, and components. Additionally, a second root cause focused on the level transient determined that the Digital Feedwater Control System (DFCS) was not designed to control reactor pressure vessel level below +48 inches on a 12-Bus lockout from 100% power. The organization had a mind-set based on procedure bases and training that DFCS in automatic would maintain reactor level below +48 inches following a 12-Bus lockout.</p> <p>Immediate corrective actions were to remove the test equipment and reset the 12-Bus lockout. Long-term corrective actions include revising the work management guidance to require the appropriate level of detail. Classroom and simulator training for all licensed operators will be performed on this event and will include changes to the abnormal operating procedures to address DFCS.</p>																																											

NRC FORM 366A (10-2010)	LICENSEE EVENT REPORT (LER) CONTINUATION SHEET	U.S. NUCLEAR REGULATORY COMMISSION			
1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
Monticello Nuclear Generating Plant	05000-263	YEAR	SEQUENTIAL NUMBER	REV NO.	2 OF 3
		2012	- 003	- 01	
NARRATIVE EVENT DESCRIPTION <p>Monticello Nuclear Generating Plant (MNGP) was in Mode 1 at 100% power prior to the event. On September 25, 2012, work was being performed by relay technicians to test the 2R Transformer [XFMR] to 12-Bus [BU] local and remote ammeter switches [IS]. The 5-pole Current Transformer isolation switch was opened to isolate the protective relaying and ammeter circuits from the 2R source to 12-Bus breaker. A Doble set was connected downstream of the open isolation switch with one lead connected to each phase and one lead to the neutral of the relaying / ammeter circuits for the purpose of providing a three-phase AC input to the ammeters and permit testing of the ammeter switches.</p> <p>At approximately 1042 hours, the phase outputs of the Doble sets were turned on one-by-one to provide 2.5 Amps per phase. After turning on the first phase the 2R to 12-Bus Feeder, the time neutral over current relay [RLY] actuated, causing a lockout of 12-Bus. The lockout of 12-Bus resulted in 12-Reactor Feedwater Pump [SK] and 12-Reactor Recirculation Pump [AD] tripping. The operating crew took actions in accordance with plant procedures for a loss of 12-Bus, 12-Feedwater trip, 12-Recirculation Pump trip, and neutron flux oscillations. Water level initially lowered to approximately +23 inches and then began to rise with the Feedwater Regulating Valves [V] in automatic. It was expected that the Digital Feedwater Control System (DFCS) in automatic would stabilize reactor level without operator actions. Prior to water level reaching +40 inch alarm setpoint, reactor operators determined that if level reached +46 inches they would manually scram the reactor. At 1044 hours, while completing the 3-way communication for manually scrambling the reactor, the Reactor [RCT] water level reached the Hi Hi setpoint (+48 inches) resulting in a Turbine Generator [TB] load reject, initiating a trip of the Turbine [TA], and subsequent Reactor scram. Reactor water level lowered resulting in a Primary Containment Isolation signal at a water level of +9 inches.</p> <p>There were no inoperable systems, structures, or components prior to the event that contributed to the event.</p>					
EVENT ANALYSIS <p>This event is being reported in accordance with 10 CFR 50.73(a)(2)(iv)(A) as an event or condition that resulted in manual or automatic actuation of any of the systems listed in paragraph 10 CFR 50.73(a)(2)(iv)(B). Specifically, the Reactor Protection System (RPS) and the Primary Containment Isolation System (PCIS) actuations.</p>					
SAFETY SIGNIFICANCE <p>The safety objective of both RPS and PCIS are to provide timely protection at the onset of conditions that could challenge the integrity of the fuel barrier and nuclear system process barriers. The RPS prevents the release of radioactive material from the fuel and nuclear system process barriers by terminating excessive temperature and pressure increases through the initiation of an automatic plant shutdown. PCIS prevents release of radioactive materials by isolating the reactor vessel and closing containment where required. For this event, the RPS, PCIS, and plant safety systems functioned as designed and fuel and nuclear system process barriers remained intact. Consequently, the event did not have an adverse impact on the health and safety of the public and was not considered a safety system functional failure.</p>					

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NARRATIVE

CAUSE

The root cause for the 12-Bus lockout was determined to be that fleet work management guidance does not require the appropriate level of detail in work plans needed to expose the potential plant impact when injecting energy into plant structures, systems, and components.

Additionally, a second root cause focused on the level transient determined that the DFCS was not designed to control reactor pressure vessel level below +48 inches on a 12-Bus lockout from 100% power. The organization had a mind-set based on procedure bases and training that DFCS in automatic would maintain reactor level below +48 inches following a 12-Bus lockout.

CORRECTIVE ACTION

The immediate corrective action was to stop work, remove the Doble test equipment, and reset the 12-Bus lockout. Long-term corrective actions include revising Work Management guidance to require the appropriate level of detail in work plans needed to expose the potential plant impact when injecting energy into systems, structures, or components.

Classroom and simulator training for all licensed operators will be performed on this event and will include changes to the abnormal operating procedures to address DFCS.

PREVIOUS SIMILAR EVENTS

There have been no similar licensee event reports in the past three years.

ADDITIONAL INFORMATION

Energy industry identification system (EIS) codes are identified in the text within brackets [xx].